

## ABSTRACT

The invention is a microwave powered lamp (10). The lamp includes a light reflective cavity (28); an electrodeless bulb (16) contained in the light reflective cavity (26) from which light is emitted when the electrodeless bulb is excited by microwaves; a magnetron (12) for providing the microwaves for exciting the electrodeless bulb; a waveguide (14) which couples the microwaves emitted by the magnetron to the light reflective cavity for exciting the electrodeless bulb; a housing (22) which contains the lamp; a detector (102, 202) disposed within the housing, which detects the microwaves which are not coupled to the bulb during operation of the magnetron and outputs a signal indicative of a level of received microwaves; and a magnetron control (300), coupled to the detector, which causes the magnetron to be turned off when a level of the signal indicates the level of received microwaves exceeds a threshold.